

## CURRICULUM VITAE

4/23/04

**NAME:** Marc Roy Blackman, M.D.

### CURRENT APPOINTMENTS:

*Primary* Chief, Endocrine Section  
Laboratory of Clinical Investigation  
Division of Intramural Research  
NCCAM, NIH  
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Bethesda, Maryland 20892  
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*University* Professor of Medicine (part-time)  
The Johns Hopkins University School of Medicine

### EDUCATION AND TRAINING:

FROM 1957 to 1963 Boston Latin School, Boston, Mass.  
Jr. and Sr. High School  
(National Honor Society)

FROM 1963 to 1968 Northeastern University,  
Boston, Mass., A.B.  
(Summa Cum Laude; Phi Kappa Phi Honor Society)

FROM 1968-1972 New York University School of Medicine  
New York, New York, M.D.  
(Alpha Omega Alpha Honor Medical Society)

FROM 1972 to 1975 Straight Medicine Internship,  
Jr. Assistant Residency,  
Sr. Assistant Residency,  
Internal Medicine  
Bronx Municipal Hospital Center,  
Albert Einstein College of Medicine,  
Bronx, New York

**EDUCATION AND TRAINING (cont'd):**

FROM 1975 to 1977      Post-Doctoral Clinical  
Research Fellowship in  
Endocrinology and Metabolism  
Clinical Endocrinology Branch  
NIDDK, NIH  
Bethesda, MD

**CERTIFICATION:**

*Medical Licensure*      New York (1973 to 1975)  
Maryland (1975 to Present)

*Medical Boards*      Diplomate, National Board of Medical Examiners  
Diplomate, ABIM, Internal Medicine  
Diplomate, ABIM, Endocrinology and Metabolism

**PROFESSIONAL EXPERIENCE:**

FROM 1977 to 1991      Staff Endocrinologist  
Department of Medicine  
The Johns Hopkins Bayview Medical Center

FROM 1977 to 1978      Instructor, Dept. of Medicine  
The Johns Hopkins University  
School of Medicine

FROM 1978 to 1986      Assistant Professor  
Department of Medicine  
The Johns Hopkins University  
School of Medicine

FROM 1986 to 1997      Associate Professor  
Department of Medicine  
The Johns Hopkins University  
School of Medicine

FROM 1980 to 2001      Guest Researcher/Special Volunteer  
Endocrinology Section  
Laboratory of Clinical Investigation  
Gerontology Research Center  
National Institute on Aging  
NIH, Baltimore, MD

FROM 1991 to 1993      Clinical Chief

	Division of Endocrinology and Metabolism The Johns Hopkins Bayview Medical Center
FROM 1991 to 1996	Associate Program Director General Clinical Research Center The Johns Hopkins Bayview Medical Center
FROM 1993 to 2001	Chief, Division of Endocrinology and Metabolism The Johns Hopkins Bayview Medical Center
FROM 1997 to 2001	Program Director General Clinical Research Center The Johns Hopkins Bayview Medical Center
FROM 1997 to 2001	Professor, Department of Medicine The Johns Hopkins University School of Medicine
FROM 2001-Present	Professor of Medicine (part-time) The Johns Hopkins University School of Medicine
FROM 2001-2004	Clinical Director Chief, Laboratory of Clinical Investigation NCCAM, NIH
FROM 2003-2004	Scientific Director for Clinical Research NCCAM, NIH
FROM 2004-Present	Chief, Endocrine Section Laboratory of Clinical Investigation NCCAM, NIH

## **PROFESSIONAL ACTIVITIES:**

### *Membership In Professional Societies*

Alpha Omega Alpha Honor Medical Society (1972)  
The Endocrine Society (1977)  
The Gerontological Society of America (1980)  
American Federation for Medical Research (1977)  
American Association for the Advancement of Science (1980)

### *Study Section and Consultant/Committee Appointments*

Endocrinology Research Consultant to Meharry Medical College, Nashville, TN,  
1983-1984

## **PROFESSIONAL ACTIVITIES (cont'd):**

Member of Special Review Committee [SSS (EDC-2)] for National Institute on Aging, NIH Study Section/Project Site Visit to Boston, Mass., August 8, 1983. Project Site Visit to Boston, Mass., August 8, 1983. Project "Psychosocial and Hormone Profiles in Normally Aging Men"

Chairman, NIA Institutional Research Board, July, 1988 to June, 1992

Scientific Advisory Board, ApolloGenetics, 1992-1999

Board of Advisors, Foundation for Better Health Care, 1996-present

Consultant in Endocrinology and Metabolism, The Johns Hopkins Hospital, 1985 to 1990.

*Study Section and Consultant/Committee Appointments*

Member, National Advisory Committee for Endocrinology of Aging Biology of Aging Program, NIA, NIH, November, 1991 to present

*Consultant/Committee Appointments (cont'd):*

Membership Committee, The Endocrine Society, June, 1993-June, 1996

Executive Committee, Biological Sciences Section, The Gerontology Society of America, January, 1995-December, 1997

Scientific Consultant, Merck Research Laboratories, 1995-1996

Scientific Consultant, Monsanto-Searle Research Laboratories, 1995-1996

Scientific Consultant, Wyeth-Ayerst Research Laboratories, 1995-1998

Androderm Advisory Board, SmithKline Beecham Pharmaceuticals, 1996-1998

Public Policy Committee, Biological Sciences Section, The Gerontology Society of America, January, 1997-December, 1999

Member, Executive Committee, General Clinical Research Center (GCRC) National Program Directors Association, March 1999-March 2002

Co-Chair, Scientific Organizing Committee, Annual GCRC National Meeting, March 10-12, 2000

**EDITORIAL ACTIVITIES:** *Ad hoc reviewer for:*

Journal of Clinical Investigation	Mechanisms of Aging and Development
Journal of the American Medical Association	Journal of Gerontology
Endocrinology	Journal of Andrology
Journal of Clinical Endocrinology and Metabolism	Neurobiology of Aging
American Journal of Physiology	

### **HONORS, AWARDS:**

Annual New York University School of Medicine Washington, DC area Alumni Leadership Award, presented in Washington, DC, October 13, 1996

Recipient: First Annual Daniel Rudman Memorial Lectureship, "Age-Related Decline in Growth Hormone and Sex Steroids: Implications for Future Treatment of the Elderly", presented at the Medical College of Wisconsin, Milwaukee, Wisconsin, July 31, 1998.

### **INVITED LECTURES (selected):**

Invited Speaker: International Symposium on "New Trends in Aging Research," Bologna, Italy, November 6-9, 1985.

Invited Participant: Symposium on "Current Perspectives in the Management of the Menopausal and Postmenopausal Patient," St. Thomas, U.S. Virgin Islands, March 11-15, 1987.

Invited Speaker: Serono International Symposium on "Cell to Cell Communication in Endocrinology," Florence, Italy, October 8-9, 1987.

Invited Speaker: Symposium on "Effect of Caloric Reduction on Primate Aging Rate", Presented at the 41st Annual Gerontological Society Meeting, San Francisco, CA, November 18-22, 1988.

Invited Speaker: Symposium on "Reproductive Issues and the Aging Male", sponsored by the Center for Population Research, NICHD, NIH, Bethesda, MD, November 26-27, 1990.

Invited Speaker: 7th Annual Berkshire Medical Conference, July 25-27, 1991, Hancock, Mass., Topics: (a) Male menopause: Fact or myth and (b) Current issues in the management of the menopause.

## **INVITED LECTURES (selected):**

Invited Chairperson: Session on "Clinical problems in the Neuroendocrinology of Aging" in workshop on "Neuroendocrinology and Aging: Perspectives and Prospectives", sponsored by the NIA, NIH and the Program of Research on Aging of the World Health Organization, Airlie Center, Airlie, Virginia, Oct. 6-9, 1991.

Invited Speaker: "Interactive effects of estrogen and growth hormone treatment on body composition in postmenopausal women," in Symposium on Postmenopausal Osteoporosis: Past, Present and Future", University of Louisville School of Medicine, Louisville, Ky, May 16, 1992.

Invited Speaker: "GHRH and its effects in men", in Symposium on "Trophic factors-influence of their loss, replacement and administration," Annual American Geriatric Society/ / American Federation for Aging Research Meeting, Washington, D.C., November 14-18, 1992.

Invited Speaker. "Aging", in Scientific Investigator's Meeting on "Treatment of Adults with Growth Hormone", sponsored by the University of Vermont College of Medicine, Stowe, Vermont, March 3-7, 1993.

Invited Speaker. "Use of GH in aging", in 3rd International Pituitary Congress, Marina Del Ray, CA, June 13-15, 1993.

Invited Chairperson and Speaker. "Growth Hormone Delivery, Dosing, and Pharmacokinetics in Adults," in Symposium on "The Somatotrophic Axis and the Reproductive Process in Health and Disease", sponsored by Serono Symposia/USA, Baltimore, MD, October 28-31, 1993.

Invited Speaker:, "The interaction of GH and testosterone administration in men," Annual American Geriatric Society/ / American Federation for Aging Research Meeting, New Orleans, LA, November 15-19, 1993.

Symposium Director and Speaker: "Effects of Growth Hormone Releasing Hormone (GHRH) Administration in Healthy Aging Men", in Symposium on "GHRH, GH, and IGF-I: Basic and Clinical Advances", sponsored by Serono Symposia/USA, San Diego, CA, December 9-12, 1993.

Invited Speaker: "Clinical and Therapeutic Implications of Age-Related GH Deficiency", presented at the Symposium on "Growth Hormone Therapy: Beyond the Boundaries of Classical Treatment Issues: Psychosocial, Economic, Ethical and Research Considerations", sponsored by Serono Symposia, Canada, Montebello, Quebec, April 15-17, 1994.

Invited Speaker: "Hormonal determinants of body weight changes in older women", presented at the Symposium on "Weight changes over a woman's life: periods of hormonal transition", NIH, Bethesda, MD, May 16-17, 1994.

## INVITED LECTURES (cont'd)

Invited Speaker: "Age-related alterations in muscle mass and strength: Are they related to alterations in the growth hormone and gonadal steroid axes?", presented at the NIA Workshop on Sarcopenia, Airlie House, Va., September 19-21, 1994.

Invited Speaker: "Effects of aging on neuroendocrine function in humans: implications for the integrity of the stress response", presented at the First World Congress on Stress, NIH, Bethesda, MD, October 4-7, 1994.

Invited Speaker: "Age-related GH deficiency: Research, Clinical and Therapeutic Considerations", presented at the NIA-Tokyo Metropolitan Institute of Gerontology -Japan Society for Biomedical Gerontology Joint Meeting, "From the Molecule to the Human", Tokyo, Japan, October 11-14, 1994.

Invited Speaker: "Pleiotropic effects of endogenous growth hormone exposure in aging," in Symposium on "Cost-Benefit Analysis of a Hormone Laden Lifespan", presented at the 47th Annual Meeting of the Gerontology Society of America, Atlanta, Georgia, November 18-22, 1994.

Invited Speaker: "Growth Hormone Releasing Hormone (GHRH) Effects in Healthy Elderly Men", presented at the International Symposium on "Growth Hormone Secretagogues", sponsored by Serono Symposia, St. Petersburg Beach, Florida, December 8-11, 1994.

Invited Speaker, "Effects of GHRH in Healthy Aged Men", presented at the weekly Neuroendocrine Research Conference, Massachusetts General Hospital, Boston, Mass., January 3, 1995.

Invited Speaker, "Age-related GH deficiency: Research, Clinical and Therapeutic Considerations", presented at the Mayo Clinic, Rochester, Minn., May 11, 1995.

Invited Speaker, "Age-related GH deficiency: Physiological Significance and Therapeutic Implications", presented at the Division of Endocrinology and Metabolism, University of Chicago, September 20, 1995.

**INVITED LECTURES (cont'd):**

Invited Speaker, "Medical uses of human GH in adults", presented at the Monsanto/Searle Company, St. Louis, MO, September 27, 1995.

Invited Speaker, "Medical uses of human GH in adults", presented at Wyeth-Ayerst Company, Philadelphia, Pa. November 30, 1995.

Invited Speaker, "The Somatopause: Research, Physiological and Therapeutic Considerations", presented at the Division of Geriatric Medicine, University of Maryland School of Medicine, February 7, 1996.

Invited Speaker, "Age-related GH deficiency and its relationship to quality of life", presented at the Department of Psychiatry, University of Maryland School of Medicine, February 15, 1996.

Invited Speaker, "The widening spectrum of hypogonadal disorders in men", to be presented in the Symposium, "Andrology: Diagnostic Dilemmas and Therapeutic Options", at the Annual Meeting of the American Association of Clinical Endocrinologists, Seattle, WA, May 1-3, 1996.

Invited Speaker, "Growth Hormone for the Elderly", presented at the Annual Johns Hopkins University School of Medicine Symposium, "Topics in Clinical Medicine", Baltimore, MD, May 13-15, 1996.

Invited Speaker, "Hormonal Changes in the Baltimore Longitudinal Study on Aging" presented at the 15th Annual Symposium on Geriatrics and Gerontology, St. Louis University School of Medicine, Sept. 24-26, 1996.

Invited Speaker, "The Future of Geriatric Therapeutics: Is There a Role for Hormone Intervention in the Elderly?", presented at the Monsanto/Searle Company's Annual Research Symposium, St. Louis, MO, October 7, 1996.

Invited Speaker, "Changes in Testosterone and Growth Hormone with Age," presented at the 1st Johns Hopkins University Symposium on Men's Health", Baltimore, MD, Nov. 11, 1996.

Invited Speaker, "Research, clinical and therapeutic implications of GH and GH secretagogue therapy of the elderly", presented at Novo Nordisk Company, Copenhagen, Denmark, November 13, 1996.

Invited Speaker, "Male Menopause", Medical Grand Rounds, Booth Memorial Hospital, New York, New York, December 3, 1996.

Invited Speaker, "Age-Related Decline in Growth Hormone and Sex Steroids: Implications for Future Treatment of the Elderly", Medical Grand Rounds, Suburban Hospital, Bethesda, MD, December 11, 1996.

**INVITED LECTURES (cont'd):**



Invited Speaker, “Role of GH Secretagogues in Anti-Aging Medical Treatment”, presented at the 4th International Conference on Anti-Aging Medicine and Biotechnology, Las Vegas, Nevada, December 14-16, 1996.

Invited Speaker, “Medical Management of Persistent Acromegaly”, presented to the Richmond Endocrine Club, Richmond, VA, December 19, 1996

Invited Speaker, (1) “Age-Related Decline in Growth Hormone and Sex Steroids: Clinical, Research and Therapeutic Implications”, presented at Medical Grand Rounds, and (2) “DHEA and Aging: What we do and do not know”, presented at Geriatrics Grand Rounds, Hunter Holmes McGuire VA Medical Center, Medical College of Virginia, December 20, 1996.

Invited Speaker, “Androgen Replacement Therapy: Why, How, and Precautions”, presented at the 15th Annual Diabetes and Endocrinology Seminar, Watson Clinic Foundation, Inc., Lakeland, Fla, February 1, 1997.

Invited Speaker, “Male Menopause, Clinical, Research and Therapeutic Perspectives”, presented at Neuroendocrinology Grand Rounds, Yale University School of Medicine, New Haven, CT, March 21, 1997.

Invited Speaker, (1) “Male Menopause”, presented at Medical Grand Rounds, (2) “Age-Related Decline in Growth Hormone and Sex Steroids: Clinical, Research and Therapeutic Implications”, presented at Endocrine Grand Rounds, Albert Einstein College of Medicine, New York, New York, March 25, 1997.

Invited Speaker, “Implications of GH sampling in the elderly”, presented at the NIH Symposium, “Assessment of the Growth Hormone/IGF-I axis in Aging”, NIH, Bethesda, MD, April 14-15, 1997.

Invited Speaker, “Low Testosterone in Cancer and COPD Patients”, presented in the Symposium on “Low testosterone in males: Are they associated with common illnesses?”, at the Annual Meeting of the American Association of Clinical Endocrinologists, Philadelphia, PA, April 16, 1997.

Invited Speaker, “Age-related decline in Growth Hormone and sex steroids: clinical, research and therapeutic considerations”, presented at the NIA’s Endocrinology of Aging Interest Group, 79th Annual Meeting of the Endocrine Society, Minneapolis, MN, June 11-14, 1997.

Invited Speaker, “Androgen Therapy in Older Women and Men”, presented in the Symposium on “Hormonal Interventions in Aging” at the Hawaii Satellite of the World Congress of Gerontology in Honolulu, Hawaii, August 16-18, 1997.

#### **INVITED LECTURES (cont’d):**

Invited Speaker, Symposium on “Trophic Factors for the Prevention of Physical Frailty”, presented at the World Congress of Gerontology, Adelaide, Australia, August 19-23, 1997.

Invited Speaker, “Trophic Factors and Immune Outcomes”, presented at the 5th Annual Work Group Meeting on Pneumococcal and Influenza Vaccines for Adults, of the Institute of Advanced Studies in Immunology and Aging, Washington, DC, October 8, 1997.

Invited Speaker, “Age-related decline in Growth Hormone and sex steroids: clinical, research and therapeutic considerations”, presented at Medical Grand Rounds, The University of Texas, Galveston, Texas, October 16, 1997.

Invited Speaker, “Age-related decline in Growth Hormone and sex steroids: clinical, research and therapeutic considerations”, presented at Medical Grand Rounds, The Johns Hopkins Hospital, October 31, 1997.

Scientific Committee Member and Invited Speaker, “Age-related decline in the GH-IGF-I axis: Clinical, research and therapeutic implications”, presented at the International Symposium on Endocrine and Metabolic Interventions in Aging”, Tampa, Florida, March 7-10, 1998.

Invited Speaker, “Growth Hormone”, presented in the Forum on Drug and Hormone Interventions in Aging, Tampa, Florida, March 10-11, 1998.

Invited Speaker, “Change in Hormone Milieu with Aging”, presented at the International Symposium on the Biology of Prostate Growth”, NIH, Bethesda, MD March 15-18, 1998.

Invited Speaker, “DHEA for the Older Man,” presented at the 2nd Johns Hopkins University Symposium on Men’s Health”, Baltimore, MD, March 20, 1998.

Invited Speaker, “Looking to the Future”, presented in the Symposium on “Age-Related Testosterone Decline in Men”, at the Annual Meeting of the American Association of Clinical Endocrinologists, Orlando, Florida, May 1-4, 1998.

Invited Speaker: (1) “Male Menopause: Myth, Menace or Misnomer”, and (2) “The Somatopause: Clinical Significance and Therapeutic Possibilities”, presented at the 19th Annual Conference on Aging, “Hormone Replacement in the Older Patient: Beyond Estrogen”, University of Texas Health Science Center, San Antonio, Texas, May 26, 1998.

Invited Speaker: Workshop, “How to conduct a clinical study”, presented at the 80th Annual Meeting of the Endocrine Society, New Orleans, LA, June 24-27, 1998.

Invited Speaker: First Annual Daniel Rudman Memorial Lectureship, “Age-Related Decline in Growth Hormone and Sex Steroids: Implications for Future Treatment of the Elderly”, presented at the Medical College of Wisconsin, Milwaukee, Wisconsin, July 31, 1998.

**INVITED LECTURES (cont’d):**

Invited Speaker: "GH responses in older men given testosterone", presented at the International Symposium on "Sex Steroids and the Somatotrophic Axis", sponsored by Serono Symposia, Naples, Florida, October 22-25, 1998.

Invited Speaker: "Clinical Research Problems in the Geriatric Population", presented at the Symposium: "Clinical Research: Improving the Process", Johns Hopkins University School of Medicine, Baltimore, MD Dec.3-4, 1998.

Invited Speaker: "The separate and interactive effects of GH and testosterone in healthy middle-aged and elderly men", presented at a planning meeting for an NIH multicenter study on the "Manopause", sponsored by the UCLA School of Medicine, Los Angeles, CA, Feb. 20-21, 1999.

Invited Speaker: "GHRH intervention in the somatopausal elderly: Current and future considerations," presented at an International Consultant's Meeting on "Future Applications of GHRH", sponsored by Serono Pharmaceuticals, Gstaad, Switzerland, February 27- March 2, 1999.

Invited Speaker: "Growth Hormone: Is it a fountain of youth for older men?", presented at the 3rd Annual Johns Hopkins University Symposium on Men's Health", Baltimore, MD, April 9, 1999.

Invited Speaker: Symposium on "Androgens in the Aging Male", sponsored by SmithKline Beecham, presented at the Annual Meeting of the American College of Physicians, New Orleans, Louisiana, April 23, 1999.

Invited Speaker: "Andropause: A Contemporary View of Osteoporosis in Older Men," presented at the 6th Annual Osteoporosis and Other Metabolic Diseases Symposium," The Greenbrier, West Virginia, May 6-7, 1999

Invited Speaker: "Clinical significance of the somatopause and gonadopause: Effects of GH and/or sex steroid interventions in healthy elderly women and men", presented at Bristol Myers Squibb Co., Princeton, New Jersey, June 23, 1999.

Invited Speaker: "Effects of Growth Hormone (GH) and/or Sex Steroid Administration on In Vitro and In Vivo Indices of Immune Function in Healthy Elderly Women and Men", presented at the International Symposium on "GH and Immunomodulation: Basic and Clinical Applications", sponsored by Serono Symposia, St. Petersburg Beach, Florida, October 7-10, 1999.

Invited Speaker: "Testosterone administration in elderly women: Is there a rationale?", presented at the Expert Workshop on "Potential Indications for Testosterone to Improve Women's Health", sponsored by Procter and Gamble Pharmaceuticals, San Francisco, CA, October 22-24, 1999.

**INVITED LECTURES (cont'd):**

Scientific Committee Member and Invited Speaker: "Physiology of Growth Hormone Decline in Aging: Current Concepts and Lessons from the NIA/NIH Clinical Trial at Johns Hopkins", presented at the International Symposium on "Endocrinology and Aging", sponsored by Serono Symposia, Tempe, Arizona, October 27-30, 1999.

Invited Speaker: "GH and Sex Steroid Replacement in the Elderly," presented at an International Consultant's Meeting on "Future Applications of Geref", sponsored by Serono Pharmaceuticals, Palm Beach, Fla, January 20- 23, 2000.

Invited Speaker: "Utility of GH Secretagogues during Aging", presented at the 3rd International Symposium on GH Secretagogues, Keystone, Colorado, February 16-19, 2000.

Invited Speaker: "Clinical significance of the somatopause and gonadopause: Effects of GH and/or Sex Steroid Interventions in Healthy Elderly Women and Men", presented at the Charles Drew University School of Medicine, Feb. 28, 2000.

Invited Speaker: "Growth Hormone Therapy in Adults", presented at the Course: "Endocrinology and Metabolism: An Update for the Primary Care Physician", Johns Hopkins University School of Medicine, Baltimore, MD, March 8-10, 2000.

Invited Speaker: "Age-Related Decline in Growth Hormone and Sex Steroids: Implications for Future Treatment of the Elderly", presented at the University of Wisconsin School of Medicine, March 21, 2000.

Invited Speaker: (1) "Andropause - Is there a condition? Is it a problem?", and (2) TRT for the Hypogonadal Older Male", presented at the "AndroPause Taskforce Meeting: Advances in Testosterone Replacement Therapy", sponsored by the Endocrine Society, Beverly Hills, CA, April 28-30, 2000.

Invited Speaker: "The Somatopause", presented at the Symposium in Geronto-Endocrinology, Annual Meeting of the German Endocrine Society and Diabetes Asssociation, Munich, Germany, May 31-June 6, 2000.

Invited Speaker: "GH and Sex Steroid Effects on Skeletal Muscle", presented at the National Institute on Aging NIH, Advisory Workshop on "Testosterone Replacement in Men (TRIM), Bethesda, MD, June 5-6, 2000.

Invited Speaker: "GH and Sex Steroid Treatment of the Elderly", presented in the Symposium on "GH Treatment in the Elderly", at the 82nd Annual Meeting of the Endocrine Society, Toronto, Canada, June 21-24, 2000.

Invited Speaker: "Male Reproductive Aging", presented at the NIH Workshop on Prostate Growth and Aging, Leesburg, VA, Sept. 13-15, 2000

**INVITED LECTURES (cont'd):**

Invited Speaker: "Age-Related Decline in Growth Hormone and Sex Steroids", presented at Medical Grand Rounds, The George Washington University School of Medicine, Washington, DC, October 19, 2000.

Invited Speaker: "Use of Growth Hormone in the Elderly", presented at the annual NIH-Foundation for the Advanced Education in the Sciences (FAES) Endocrine Review Course, Bethesda, MD, October 23-27, 2000, Bethesda, MD.

Invited Speaker: "Andropause-Testosterone Replacement Therapy for the Hypogonadal Older Man, presented at the Kronos Research Foundation, Phoenix, AZ, November 9, 2000.

Invited Speaker: "GH for Anti-Aging: What Are the Facts?", presented at the Fourth Annual Pharmacia KIGS/KIMS USA National Meeting, Scottsdale, AZ, November 10-11, 2000.

Invited Speaker: "Age-Related Decline in Growth Hormone and Sex Steroids: Implications for Future Treatment of the Elderly", presented at the Annual Course, Topics in Ambulatory Medicine, Johns Hopkins University School of Medicine, Baltimore, MD, Dec. 6-8, 2000.

Invited Speaker: Satellite Symposium on "Male Hypogonadism: Prevalence, Diagnosis and Consequences", St. Louis University School of Medicine CME Roundtable Program, Chicago, IL, March 23-25, 2001.

Invited Speaker: 2nd Annual AndroPause Taskforce Meeting, sponsored by the Endocrine Society, Beverly Hills, CA, April 20-22, 2001.

Invited Speaker: Satellite Symposium on "Testosterone Replacement Therapy in Men: Emerging Clinical Issues", at the 10th Annual Meeting of the American Association of Clinical Endocrinologists, San Antonio, TX, May 2-6, 2001.

Invited Speaker: "Growth Hormone and Aging", presented at the Annual Meeting of the American College of Sports Medicine, Baltimore, MD, May 30-June 2, 2001.

Invited Speaker: "Combination Therapy of GH and T in Older Men", presented in the Symposium on "Androgen Therapy and Ageing", at the VIIth International Congress of Andrology, Montreal, Canada, June 15-19, 2001.

Invited Speaker, "Update on the Male Andropause: Research and Clinical Considerations" to be presented at the Johns Hopkins University CME course, "Update in Selected Topics in Reproductive Endocrinology", Baltimore, MD, July 20-21, 2001.

Invited Speaker, "Male Hypogonadism: Prevalence, Diagnosis, Consequences and New Treatment Strategies", to be presented as CME Medical Grand Rounds, Robert Wood Johnson Medical Center, New Brunswick, New Jersey, September 12, 2001.

**INVITED LECTURES (cont'd):**

Invited Speaker: “Age-related Decline in Growth Hormone and Sex Steroids: Current and Future Considerations”: to be presented at the International Symposium on “Growth Hormone and Aging”, sponsored by Serono Symposia, Tampa, Florida, October 17-20, 2001.

Invited Speaker: “Use of Growth Hormone in the Elderly”, presented at the annual NIH-Foundation for the Advanced Education in the Sciences (FAES) Endocrine Review Course, Bethesda, MD, October 20, 2001, Bethesda, MD.

Invited Speaker: “Screening and Diagnosing Male Hypogonadism” in Endocrine Society CMES Symposium “Testosterone Replacement Therapy: New Modalities and Emerging Clinical Issues, Ft. Lauderdale, FL, February 21, 2002.

Invited Speaker: “An Integrative Approach to the Management of the Menopause”, in Symposium on Women’s Health, presented at the American Academy of Dermatology Annual Meeting, New Orleans, LA, February 23, 2002.

Invited Expert Panelist, NIH/NCI Symposium Biological Mechanisms of Psychosocial Effects on Disease, Bethesda, MD, Feb 28-March 1, 2002

Invited Speaker “Developing a Strategy for Research in Complementary and Alternative Medicine at the NIH”, presented at the Frederick Cancer Research Center, NCI, NIH, March 7, 2002.

Invited Speaker: “Screening and Diagnosing Male Hypogonadism” in Endocrine Society CMES Symposium “Testosterone Replacement Therapy: New Modalities and Emerging Clinical Issues, Long Beach, CA, April 4, 2002.

Invited Chair, Basic Science Abstract Review Committee, 2<sup>nd</sup> International Meeting Complementray and Alternative Medicine, Boston, MA, April 12-14, 2002.

Invited Speaker: “Growth Hormone, IGF and IGFBP Declines with Age” in NIA Workshop “GH/IGF I and Aging Tissues”, The National Conference Center at Lansdowne, VA, May 1-2, 2002.

Invited Speaker: 3<sup>rd</sup> Annual Andropause Taskforce, sponsored by the Endocrine Society, Los Angeles, CA, May 3-5, 2002.

Invited Speaker: “Andropause-Is there a condition? Is it a problem?” in the Endocrine Society CMES Symposium “Treating the Andropause”, Atlanta, Georgia, June 8, 2002.

Invited Speaker: “Male Hypogonadism: Prevalence, Diagnosis, Consequences, and New treatments,” CME Medical Grand Rounds, in Robert Wood Johnson Medical Center, New Brunswick, New Jersey, June 12, 2002.

**INVITED LECTURES (cont’d):**

Invited Speaker: “Effects of Low Testosterone on Bone Density” in Endocrine Society CMES Symposium “Critical Issues in Male Hypogonadism and Testosterone Replacement Therapy: Annual Meeting of the Endocrine Society, San Francisco, CA June 21, 2002.

Invited Chair: Oral Abstract Session on “Aging”, Annual Meeting of the Endocrine Society, San Francisco, CA June 21, 2002.

Invited Speaker: “Complementary Medicine in the Treatment and Prevention of Prostate Cancer” in 23rd Annual Conference on Aging, South Texas Veterans Health Care System, “Clinical challenges and controversies in prostate cancer: Prevention, treatment and quality of life issues,” San Antonio, Texas, September 27-28, 2002

Invited Program Director and Speaker, “Andropause-Is there a Condition? Is it a Problem?” Section on “Treating the Andropause” in Endocrine Society CMES Symposium, “Aging Men and Women: Does Sex Steroid Therapy Improve Quality of Life?”, Atlanta, Georgia, September 28, 2002.

Invited Co-Chair; Symposium on “Growth Hormone Physiology”, in First Joint Symposium GH-IGF-I 2002, Boston, MA, October 6, 2002

Invited Speaker: “Use of Growth Hormone in Adults”, NIH-Foundation for the Advanced Education in the Sciences (FAES) Annual Endocrine Review Course, Bethesda, MD, October 27, 2002, Bethesda, MD.

Invited Speaker: “Screening and Diagnosing Male Hypogonadism” in Endocrine Society CMES Symposium “Testosterone Replacement Therapy: New Modalities and Emerging Clinical Issues, Boston, MA, November 6, 2002.

Invited Speaker: “Impact of Physical Exercise on Endocrine Ageing”, in Symposium on “Exercise and Ageing”, International Workshop “Hormones, Body Composition and Physical Performance”, Turin, Italy, November 15-17, 2002.

Invited Speaker: “DHEA Declines in Aging Men: Clinical Significance and Therapeutic Possibilities”, In Johns Hopkins University CMES Symposium “Hormonal Changes and Their Effects on Men”, Baltimore, MD, December 16, 2002.

Invited Speaker: “Overview on Age-related Endocrine Changes and the Role of Supplementation,” in NIH ODS / NIA Conference on “Dietary Supplement Use in the Elderly”, Bethesda, Maryland, January 14-15, 2003.

Invited Speaker: “Overview on Research conducted in Testosterone Supplementation in Aged Men”, in Institute of Medicine Committee on Assessing the Need for Clinical Trials of Testosterone Replacement Therapy, Washington, DC, January 30, 2003.

**INVITED LECTURES (cont’d):**

Invited Panelist and Speaker: “Testosterone Supplementation in Aged Men”, in Androgel Clinical Investigators’ Meeting, San Juan, Puerto Rico, March 13-14, 2003.

Invited Speaker: “Age-related Decline in Testosterone: Clinical Significance and Future Research Directions”, Endocrine Grand Rounds, The Washington Hospital Center, April 8, 2003.

Invited Speaker: “The Male Andropause”, in Symposium on “The Aging Man”, The Biennial Meeting of the Johns Hopkins Medical and Surgical Association, Baltimore, MD, May 2, 2003.

Invited Speaker: “Effects of Low Testosterone on Bone Density” in Symposium on “The Impact of Low Testosterone in Chronic Diseases”, Annual Meeting of the American Association for Clinical Endocrinology, San Diego, CA, May 15-18, 2003.

Invited Program Chair and Speaker: “The Importance of Testosterone in Maintaining Optimal Bone Density in Men” in Endocrine Society CMES Symposium “Critical Issues in Male

Hypogonadism and Testosterone Replacement Therapy”, Annual Meeting of the Endocrine Society, Philadelphia, PA, June 19-22, 2003.

Invited Speaker, “Complementary and Alternative Medicine/HRT”, to Health Resources and Services Administration Office of Women’s Health and Bureau of Health Professions’ Women’s Health Coordinating Committee, Rockville, MD, August 21, 2003.

Invited Speaker: “Does Age-Associated Hypogonadism Affect Function?” in Symposium “Men's Midlife Health: Fitness and Function After Fifty”, Medical College of Virginia, Richmond, VA, September 20, 2003.

Invited Speaker: “Complementary and Alternative Medicine Research in the Intramural Program NCCAM, NIH “, Indo-US Traditional Medicine Workshop, New Delhi, India, October 17-25, 2003.

Invited Speaker: “Endocrinology and Aging”, FAES Annual NIH Review Course in Endocrinology, Bethesda, MD , October 26, 2003

Visiting Professor and Invited Speaker: “ The Effects of GH and Testosterone Intervention in the Aging Men”, and “New Perspectives on DHEA Actions in the Prostate” Harbor UCLA Medical Center, Los Angeles, CA, Nov 12-14, 2003,

**INVITED LECTURES (cont’d):**



Invited Plenary Speaker: “Natural Estrogens”-What is Real and What is Hype?, Phoenix Triad Conference on Longevity Health Sciences, Phoenix, AZ, December 11-13, 2003.

Visiting Professor and Invited Speaker: Medical Grand Rounds ”Intramural Research at the National Center for Complementary and Alternative Medicine”, and Endocrine Grand Rounds,

“Effects of GH and Sex Steroid Intervention in Healthy Aged Women and Men”, University of Louisville School of Medicine, Louisville, KY, January 7-8, 2004.

Invited Speaker: "Complementary and Alternative Medicine Approaches to Unraveling Brain-Body Interactions", presented at the NINCDS Series, “Unraveling the Mysteries of the Brain”, NIH, Bethesda, MD, January 15, 2004

Invited Speaker: “Is Aging a Neuroendocrine Phenomenon?” in University of South Florida: Third National Symposium on Pituitary Disorders, Clearwater, FL, February 26-29, 2004.

Invited Speaker: “Ethical Considerations in CAM Clinical Research”, in University of South Florida: Fourth National Symposium: Bioethical Considerations in Human Subjects Research, Clearwater, FL, March 12-14, 2004.

Invited Speaker: “Carnitine and Male Fertility”, in NIH Workshop on “Carnitine: The Science Behind a Conditionally Essential Nutrient”, NIH, Bethesda, MD, March 25-26, 2004,

Invited Speaker: "Age-Related Decline in Testosterone in Men: Clinical Significance and Future Research Directions", Endocrine Grand Rounds, University of Maryland School of Medicine, Baltimore, MD, March 29, 2004.

Invited Keynote Speaker: “Inter-relationships among Growth Hormone, Sex Steroids and Aging”, Annual Meeting of the Academy of Behavioral Medicine Research, Jackson Hole, Wyoming, June 10-14, 2004.

Invited Speaker: "Pituitary replacement: the fountain of youth?" at the Endocrine Society's Clinical Endocrinology Update: 2004 meeting, Baltimore, MD, October 3-6, 2004.

Invited Speaker: "Safety and Efficacy of Complementary Medical Practices" in Symposium: Health Supplements in Andrology: Fact or Fiction?, 8th International Congress of Andrology, June 12-16, 2005, Seoul, Korea.

## **INSTITUTIONAL ADMINISTRATIVE APPOINTMENTS**

Member Chesapeake Education Research Committee (1980-2000)

and Co-Director, Summer College/Medical Student Research Program (1985-1992)  
Johns Hopkins Bayview Medical Center

Clinical Chief (1991 to 1993)  
Division of Endocrinology and Metabolism  
Johns Hopkins Bayview Medical Center

Chief (1993-2001)  
Division of Endocrinology and Metabolism  
Director, Endocrinology Out-Patient Clinic  
Johns Hopkins Bayview Medical Center

Associate Program Director (1991-1996)  
GCRC, The Johns Hopkins Bayview Medical Center

Member, Fellowship Selection Committee (1995-1999)  
Joint Training Program in Endocrinology and Metabolism  
JHH-JHBMC-Sinai Hospital

Member, Education and Cultural Change Subcommittee (1995-1998)  
of the Women in Academic Medicine Executive Committee  
Dept. of Medicine, Johns Hopkins Hospital

Program Director (1997-2001)  
GCRC, The Johns Hopkins Bayview Medical Center

Member, Medical Executive Committee (2001-2004)  
The Clinical Center  
National Institutes of Health

Member, 2003-2004 Admissions Committee, NIH-Duke Training Program in Clinical Research  
and the University of Pittsburgh Training in Clinical Research Program

Member NIH/Foundation for the Advanced Education in the Sciences Continuing Medical  
Education Committee, (2003-present)

## **TEACHING:**

*Mentoring Responsibilities as a Research Program Director and Research Preceptor for students, research fellows, junior faculty, staff clinicians, staff scientists and other trainees*

Supervision of clinical, translational; and laboratory-based research training, including protocol design, implementation, data management and analysis, and preparation of verbal presentations, manuscripts, grants and other reports.

Chief, Division of Endocrinology and Metabolism (1993-2001)  
Director, Endocrinology Out-Patient Clinic  
Johns Hopkins Bayview Medical Center

Associate Program Director (1991-1996)  
GCRC, The Johns Hopkins Bayview Medical Center

Member, Fellowship Selection Committee (1995-2000)  
Joint Training Program in Endocrinology and Metabolism  
JHH-JHBMC-Sinai Hospital

Member, Education and Cultural Change Subcommittee (1995-2000)  
of the Women in Academic Medicine Executive Committee  
Dept. of Medicine, Johns Hopkins Hospital  
Program Director (1997-2001)  
GCRC, The Johns Hopkins Bayview Medical Center

Scientific Director for Clinical Research  
Chief, Laboratory of Clinical Investigation  
Chief, Endocrinology and Metabolism Section  
NCCAM, NIH

#### **Research Advisees/Trainees:**

<b><u>Individual</u></b>	<b><u>Dates</u></b>	<b><u>Current Position</u></b>
Suzan Khoromi, MD	10/03-present	Clinical Research Fellow DIR, NCCAM, NIH
Barbara Moquin, MSN (research)	4/03-present	Sr. Nurse specialist  DIR, NCCAM, NIH
Iirini Manoli, MD	10/02-present	Visiting Fellow Endocrine Section, LCI, DIR NCCAM, NIH
Hanh Le, PhD	10/02-present	Biologist Endocrine Section, LCI, DIR NCCAM, NIH

Dawn B. Wallerstedt, RN, FNP	7/02-3/04	Research Nurse Practitioner DIR, NCCAM, NIH
Jenna Kahn, BS	7/02-6/04	Post-baccalaureate IRTA Endocrine Section, LCI, DIR NCCAM, NIH
Aviva Wertkin, BA	10/01-8/03	Student IRTA DIR, NCCAM, NIH
Julia Arnold, PhD	8/01-Present	Staff Scientist Endocrine Section, LCI, DIR NCCAM, NIH
Patrick Mansky, MD	7/01-3/04	Staff Clinician DIR, NCCAM, NIH
Katharine M. Pabst, CRNP, MPH	5/01-11/02	Research Nurse Practitioner DIR, NCCAM, NIH
Anne R. Cappola, M.D.	7/00-4/01	Asst. Prof. Division of Endocrinol. and Metabolism Department of Medicine, University of Pennsylvania School of Medicine
*Jeffrey Gusenoff, B.S.	9/94-6/01	Resident, Surgery Strong Memorial Hospital Univ. of Rochester School of Medicine
*Recipient, Paul Ehrlich Research Award, JHU School of Medicine, 4/13/00 (mentor, MRB)		
Jimmy Edmond, M.D.	10/98-6/00	Private Practice, Geriatric Medicine
Faina Caplan, M.D.	1/98-6/99	Private Practice, Geriatric Medicine

**TEACHING (cont'd):****Research Advisees/Trainees (cont'd):****Individual****Dates****Current Position**

Thomas Munzer, M.D. Medicine	12/97-8/00	Fellow Division of Geriatric  Department of Medicine, Johns Hopkins University School of Medicine
Taylor Marcell, Ph.D.	8/97-7/99	Director Kinesiology Kronos Longevity Res.Inst. Phoenix, AZ
Colleen Christmas, MD Medicine	7/96-6/99	Assistant Professor Division of Geriatric  Department of Medicine, Johns Hopkins University School of Medicine
Jocelyn Jayme, MD	7/95-10/97	Private Practice, Endocrinology
Kieran O'Connor, MD Medicine	7/93-11/96	Director of Geriatric  Louth Hospital, Dundalk Co. Louth, Ireland
Thomas Stevens, MD Medicine	7/92-6/96	Assistant Professor Division of Geriatric  Department of Medicine Univ. of South Alabama
Ann Davidoff, PhD	11/93-4/95	Staff, Out-Patient Dept. Geriatric Psychiatry Shepherd Pratt Hospital Baltimore, MD

**TEACHING (cont'd):****Research Advisees/Trainees (cont'd):**

<b><u>Individual</u></b>	<b><u>Dates</u></b>	<b><u>Current Position</u></b>
Jan Busby-Whitehead, MD	7/93-12/94	Associate Professor

		Chief, Div. of Geriatrics Dept. of Medicine UNC at Chapel Hill
Janet Vittone, MD	7/91-6/94	Assistant Professor Div. of Community Medicine Dept of Med., Mayo Clinic
	19	
Emiliano Corpas, MD, PhD	7/89-7/92	Assoc. Dir, Clin. Research Merck Sharp & Dohme de Espana, SA Josefa Valcarcel 38 28027 Madrid
Michele F. Bellantoni, MD	7/87-6/90	Associate Professor Division of Geriatric
Medicine		Department of Medicine, Johns Hopkins University School of Medicine
Claire Waltman, MD	8/88-8/90	Private Practice, Endocrinology
Carlo S. Contoreggi, MD	7/85-12/87	Senior Investigator Addiction Research Center NIDA, NIH
		Associate Professor Dept. of Medicine Johns Hopkins University School of Medicine

**TEACHING (cont'd):****Research Advisees/Trainees (cont'd):**

<u>Individual</u>	<u>Dates</u>	<u>Current Position</u>
Eugenia P. Pavlov, MD	7/83-6/85	Assistant Professor Dept. of Medicine

		University of Maryland School of Medicine Private practice (deceased)
Robert P. Roca, MD	7/83-6/84	Assistant Professor, Depts. of Med. & Psychiatry Johns Hopkins University
		Director, Geriatric Psychiatry Shepherd Pratt Hospital Baltimore, MD
Robert Wehmann, MD, PhD	7/81-6/83	Associate Professor of Med. SUNY Downstate Medical
Ctr		Chief, Div. of Endocrinology Brooklyn VA Hospital
Panayiotas D. Tsitouras, MD	7/77-6/82	Clinical Director Kronos Longevity Research institute

### **Course or other teaching program coordination**

Course Director, "Introduction to Clinical Research", JHBMC GCRC,  
Dec., 1994 and March, 1995

Course Co-Director, "Introduction to Clinical Research", sponsored by the JHBMC  
General Clinical Research Center, annually each July, 1996-July, 2000

Director, Weekly research conferences (Mon and Fri)-Endocrine Section, JHBMC/GRC

Director, Regular JHBMC House Staff Endocrine morning report (1-2 x monthly)  
and 12 noon House Staff Endocrine Clinical Conference series (1-2 x monthly)

### **TEACHING (cont'd):**

#### **Clinical Instruction/Attending Responsibilities (1977-2001)**

Attending in Internal Medicine (in-patient) -JHBMC, 1 month per year

Attending in Endocrinology and Metabolism (in-patient consult service)-  
JHBCM, 3-4 months per year

Director and Attending, JHBMC Out-patient Endocrine Clinic, 1/2 day weekly

Discussant, numerous clinical lectures at JHBMC, JHH and other institutions  
(e.g., Medical and Endocrine Grand Rounds, case presentations)

**Faculty, NIH Inter-Institute Endocrine Training Program (April, 2001-Present)**

Attending in Endocrinology and Metabolism (in-patient service), one month yearly

Discussant, clinical lectures, rounds, case presentations

**RESEARCH GRANT PARTICIPATION:**

**Active**

K-23 (Cappola)	4/1/02-3/31/07	0%
NIH	\$721,779	
Androgens, Myostatin and Sarcopenia in Older Women		

Collaborator on a longitudinal study of the relationships of changes in serum levels of ovarian and adrenal androgens, and myostatin, with alterations in muscle mass, strength and function in two well-characterized cohorts of aging women, the Cardiovascular Health Study and the Women's Health and Aging Study II.

**Prior**

5 M01-RR/AG02719-14 (Miller)	7/1/98- 11/30/02	50%
NCRR, NIH	\$12,797,823	
General Clinical Research Center		

Program Director of the General Clinical Research Center at the Johns Hopkins Bayview Medical Center

**RESEARCH GRANT PARTICIPATION (cont'd):**

**Prior**

1R01-59164-01 (Stewart)	4/1/99 - 3/31/03	10%
NIH	\$1,739,127	
Exercise Training in Older Hypertensive Men and Women		

Co-investigator on a study that examines the effects of 6-months of exercise training on BP and related parameters of CV structure and function in older men and women with milder forms of hypertension.



- #257-102 (MacLean) 11/1/99 - 10/31/01 10%  
Pfizer \$242,250  
Co-Investigator on a Randomized, Double Blind, Placebo-Controlled, Five Parallel Group Study of the Effect of CP-424, 391 on Physical Performance and Body Composition in Older Subjects  
This is a study of the effects of 2 years of administration of an oral GH secretagogue (CP-424,391) on physical performance, body composition, endocrine-metabolic function, and quality of life in healthy older women and men with baseline decrease in physical functioning.
- Arthritis Foundation (Bathon/Blackman) 1/1/01-12/31/02 7.5%  
Maryland Arthritis Research Center (MARC) \$100,000  
Co-investigator on a study examining whether dysregulation of the GH/IGF-I axis contributes to sarcopenia in patients with active rheumatoid arthritis, pre and post TNF alpha receptor blockade
- 5-T32 AG00120-14 (Bennett) 12/1/96 - 11/30/01 0%  
NIH \$1,230,110  
Research Training in Gerontology and Geriatrics  
Primary mentor on an NIH training grant for post-doctoral fellows in Geriatric Medicine that will produce clinical and laboratory researchers in Gerontology and Geriatrics.
- T-32; Institutional NRSA(Zirkin) 12/1/96 - 11/30/01 0%  
NIH \$609,932  
Training Grant in the Cellular and Molecular Bases of Aging  
Primary mentor on an NIH training grant for 6 postdoctoral trainees that will produce researchers with rigorous training in the disciplines that constitute the underpinnings of cellular and molecular research in aging process
- Beeson Faculty Scholar in Aging Research(Bellantoni) 7/1/97 - 6/30/00 0%  
American Federation for Aging Research \$450,000  
GH and Sex Steroid Effects on Bone in Older Women  
Primary mentor on a career development award for junior faculty. This grant provides salary support for Dr. Bellantoni for the GH/ Sex Steroid Study, the Perimenopausal Initiative, and the GH-Releasing Peptide and Sex Steroid Effects on Bone in Healthy, Osteopenic Elderly Women Study.

## **RESEARCH GRANT PARTICIPATION (cont'd):**

### **Prior**

- RO-1 AG-11002-05 (Blackman) 7/1/92 - 6/30/99 25%  
NIH \$1,347,522  
Growth Hormone and Sex Steroid Effects on Skeletal Muscle  
P.I. on a study of the effects of administration of recombinant human GH and sex hormones, alone and in combination, on skeletal muscle, body composition, endocrine-metabolic, cardiac and immune functions, and quality of life in women and men beyond the age of 65.

PA-90-30 (Miller)	7/1/93 - 6/30/96	0%
NIH/GCRC CAP (Bellantoni)      \$157,500		
Growth hormone-releasing hormone and estrogen effects on bone		
Primary mentor on a study of the effects of GH-releasing hormone and estrogen, alone and in combination, on bone structure and function in postmenopausal women.		
Pfizer/AGS Postdoctoral Fellowship (Bellantoni)	7/1/90 - 6/30/92	0%
\$70,000		
Effects of age, body composition, and sex hormones on GH secretion in postmenopausal women		
Primary mentor on a study of the inter-relationships of aging, body fat amount and distribution, and ovarian steroids on regulation of the GH/IGF-I axis in postmenopausal women		
R0-1 (Walston)	12/1/00-10/31/03	15%
NIH      \$750,000		
The Biologic Correlates of the Geriatric Syndrome of Frailty		
Co-investigator on a study that will examine the separate and interactive relationships among certain neuroendocrine, immunological and musculoskeletal abnormalities in a well-defined population of frail, aged women and men, and attempt to correlate these pathophysiological outcomes with molecular derangements in patterns of gene expression, apoptosis, and DNA repair.		
R0-1 (Fedarko)	12/01/00 to 11/30/03	10%
NIH      \$475,000		
Estrogen receptor structure and function in aging bone. Co-investigator on an in vitro study of the effects of aging and administration of bone anabolic agents on presence and activity of estrogen receptor alpha and beta isoforms in bone cells.		

## **PUBLICATIONS:**

### **PEER-REVIEWED ARTICLES**

1. Blackman, M. R., M. C. Gershengorn, and B. D. Weintraub, Excess Production of Free Alpha Subunits by Mouse Pituitary Thyrotropic Tumor Cells In Vitro, Endocrinology 102: 499-508, 1978.
2. Blackman, M.R., B.D. Weintraub, S.W. Rosen, I.A. Kourides, K.Steinwascher, and M. H. Gail, Human Placental and Pituitary Glycoprotein Hormones and their Subunits as Tumor Markers: A Quantitative Assessment, J. Natl. Cancer Inst. 65: 81-93, 1980.

3. Blackman, M. R., B. D. Weintraub, I. A. Kourides, J. T. Solano, T. Santner, and S. W. Rosen, Discordant Elevation of the Common  $\alpha$ -Subunit of the Glycoprotein Hormones Compared to Beta Subunits in Serum of Uremic Patients, *J. Clin. Endocrinol. Metab.* 53: 39-48, 1981.
4. Harman, S. M., P. D. Tsitouras, P. T. Costa, and M. R. Blackman, Reproductive Hormones in Aging Men II: Basal Pituitary Gonadotropins and Gonadotropin Responses to Luteinizing Hormone Releasing Hormone, *J. Clin. Endocrinol. Metab.* 54: 547-551, 1982.
5. Briefel, G. R., P. D. Tsitouras, M. A. Kowatch, S. M. Harman, and M. R. Blackman, Decreased In Vitro Testosterone Production by Isolated Leydig Cells from Uremic Rats, *Endocrinology* 110: 976-981, 1982.
6. Blackman, M. R., G. R. Briefel, P. D. Tsitouras, and S. M. Harman, Excess In Vitro Secretion of the Free  $\alpha$ -Subunit of the Glycoprotein Hormones by Pituitary Cells from Chronically Uremic Rats, *Endocrinology* 110: 1964-1971, 1982.
7. Wehmann, R. E., M. R. Blackman, and S. M. Harman, Metabolic Clearance Rates of Luteinizing Hormone in Women During Different Phases of the Menstrual Cycle and While Taking an Oral Contraceptive, *J. Clin. Endocrinol. Metab.* 55: 654-659, 1982.
8. Harman, S. M., R. E. Wehmann, and M. R. Blackman, Pituitary-Thyroid Hormone Economy in Healthy Aging Men: Basal Indices of Thyroid Function and Thyrotropin Responses to Constant Infusions of Thyrotropin Releasing Hormone. *J. Clin. Endocrinol. Metab.* 58: 320-326, 1984.
9. Tsitouras, P. D., M. A. Kowatch, M. R. Blackman, and S. M. Harman In Vivo HCG Administration Reverses the Testosterone Secretory Defect of Leydig Cells from Old Rats. *J. Gerontol.* 39: 257-263, 1984
10. Haji, M., G. S. Roth, and M. R. Blackman, Excess In Vitro Prolactin Secretion by Pituitary Cells from Ovariectomized Old Rats. *Am. J. Physiol.* 247 (Endocrinol. Metab. 10): E483 - E488, 1984.

#### **PEER-REVIEWED ARTICLES (cont'd)**

11. Blackman, M. R., A. Mukherjee, P. D. Tsitouras, and S. M. Harman, Decreased In Vitro Secretion of LH, FSH, and Free  $\alpha$ -Subunits by Pituitary Cells from Old Male Rats, *Am. J. Physiol.* 249 (Endocrinol. Metab. 12): E145-E151, 1985.
12. Tsitouras, P. D., M. A. Kowatch, G. R. Briefel, J. H. Kalbfleisch, S. M. Harman, and M. R. Blackman, In Vivo Pretreatment with HCG Fails to Reverse the Dysfunction of Isolated Leydig Cells from Chronically Uremic Rats, *Biol. Reprod.* 33: 781-789, 1985.

13. Pavlov, E. P., S. M. Harman, G. R. Merriam, M. C. Gelato and M. R. Blackman, Responses of Growth Hormone and Somatomedin-C to Growth Hormone Releasing Hormone in Healthy Aging Men, *J. Clin. Endocrinol. Metab.*, 62: 595-600, 1986.
14. Pavlov, E. P., S. M. Harman, G. P. Chrousos, D. L. Loriaux, and M. R. Blackman, Responses of Plasma Adrenocorticotropin, Cortisol and Dehydroepiandrosterone to Ovine Corticotropin Releasing Factor in Healthy Aging Men, *J. Clin. Endocrinol. Metab.*, 62: 767-772, 1986.
15. Chuknyiska, R. S., M. R. Blackman, W. C. Hymer, and G. S. Roth, Age-Related Alterations in the Number and Function of Pituitary Lactotropic Cells from Intact and Ovariectomized Rats, *Endocrinology*, 118: 1856-1862, 1986.
16. Blackman, M. R., M. A. Kowatch, R. E. Wehmann, and S. M. Harman. Basal Serum Levels of Prolactin and Prolactin Responses to Constant Infusions of Thyrotropin Releasing Hormone in Health Aging Men, *J. Gerontol.* 41: 699-705, 1986.
17. Blackman, M. R., P. D. Tsitouras, and S. M. Harman, Reproductive Hormones in Aging Men III: Basal and LHRH-stimulated concentrations of the common  $\alpha$ -subunit of the glycoprotein hormones, *J. Gerontol.* 42: 476-481, 1987.
18. Chuknyiska, R. S., M. R. Blackman and G. S. Roth, Ionophore A23187 and Calcium Ions Partially Reverse the In Vitro LH Secretory Defect of Pituitary Cells from Old Rats, *Am. J. Physiol.* 253 (Endocrinol. Metab. 16): E233 - E237, 1987.
19. Blackman, M.R., B. D. Weintraub, S. W. Rosen, and S. M. Harman, Comparison of the effects of lung cancer, benign lung disease and normal aging on pituitary-gonadal function in men, *J. Clin. Endocrinol. Metab.* 66: 88-95, 1988.
20. Bellantoni, M.F., and M. R. Blackman, Diagnostic Screening for osteoporosis: A brief critique of techniques for detecting types I and II osteoporosis, *Geriatrics* 43: 63-70, 1988.
21. Kochman, K., J.A. Joseph, M.R. Blackman, C.A. Stagg, and G.S. Roth, Impaired down-regulation of pituitary dopamine receptors by estradiol in aged rats, *Proc. Soc. Exptl. Biol. Med.*, 192: 23-26, 1989.

#### **PEER-REVIEWED ARTICLES (cont'd)**

22. Stewart, D.A., M.R. Blackman, M.A. Kowatch, D.B. Danner and G.S. Roth, Discordant effects of aging on prolactin and LH- $\beta$  mRNA levels in the female rat, *Endocrinology*, 126: 773-778, 1990.
23. Contoreggi, C.S., M.R. Blackman, R. Andres, D. Muller, J. Fleg, E. Lakatta, and S.M. Harman, Plasma levels of estradiol, testosterone, and dehydro-epiandrosterone sulfate do not predict risk of coronary artery disease in men, *J. Androl.*, 11: 460-470, 1990.

24. Roca, R.P., M.R. Blackman, M.B. Ackerley, S.M. Harman, and R.I. Gregerman, Thyroid hormone elevations during acute psychiatric illness: relationship to severity and distinction from hyperthyroidism, *Endocr. Res.*, 16: 415-447, 1990.
25. Bellantoni, M.F., S.M. Harman, D. Cho, and M.R. Blackman, Effects of progestin-opposed transdermal estrogen administration on GH and IGF-1 in postmenopausal women of different ages, *J. Clin. Endocrinol. Metab.*, 72: 172-178, 1991.
26. Waltman, C., M.R. Blackman, G.P. Chrousos, C. Riemann, and S.M. Harman, Spontaneous and glucocorticoid-inhibited ACTH and cortisol secretion are similar in healthy old and young men, *J. Clin. Endocrinol. Metab.*, 73: 495-502, 1991.
27. Bellantoni, M.F., S.M. Harman, V.E. Cullins, S.M. Engelhardt, and M.R. Blackman, Transdermal estradiol with oral progestin: biological and clinical effects in younger and older postmenopausal women, *J. Gerontol.* 46: M216-M222, 1991.
28. Miyamoto, A., T. Maki, M.R. Blackman, and G.S. Roth, Age-related changes in the mechanisms of LHRH-stimulated LH release from pituicytes in vitro, *Exptl. Gerontol.* 27: 211-219, 1992.
29. Busby, M.J., M.F. Bellantoni, J.D. Tobin, D. Muller, S. Kafonek, M.R. Blackman and R. Andres, Glucose tolerance in women: the effects of age, body composition, and sex hormones, *J. Am. Geriatr. Soc.* 40: 497-502, 1992.
30. Corpas, E., S.M. Harman, M.A. Piñeyro, R. Roberson, and M.R. Blackman, Growth hormone (GH)-releasing hormone- (1-29) twice daily reverses the decreased GH and insulin-like growth factor-I levels in old men, *J. Clin. Endocrinol. Metab.* 75: 530-535, 1992.
31. Corpas, E., S.M. Harman, and M.R. Blackman, Serum IGF-binding protein-3 is related to IGF-I, but not to spontaneous GH release, in healthy old men, *Horm. Metab. Res.* 24: 543-545, 1992.
32. Cizza, C., L.S. Brady, A.E. Calogero, G. Bagdy, A.B. Lynn, M.A. Kling, M.R. Blackman, G.P. Chrousos, and P.W. Gold, Central hypothyroidism is associated with advanced age in male Fischer 344/N rats: in vivo and in vitro studies, *Endocrinology* 131: 2672-2680, 1992.

**PEER-REVIEWED ARTICLES (cont'd)**

33. Corpas, E., S.M. Harman, M.A. Piñeyro, R. Roberson, and M.R. Blackman, Continuous subcutaneous infusions of GHRH 1-44 for 14 days increase GH and IGF-I levels in old men, *J. Clin. Endocrinol. Metab.* 76: 134-138, 1993.
34. Corpas, E., S.M. Harman, and M.R. Blackman, Human Growth Hormone and Human Aging, *Endocr. Rev.* 14: 20-39, 1993.

35. Cizza, G., R. Kvetnansky, M.E. Tartaglia, M.R. Blackman, G.P. Chrousos, and P.W. Gold, Immobilization stress rapidly decreases hypothalamic corticotropin-releasing hormone secretion in vitro in the male 344/N Fischer rat, *Life Sci.* 53: 233-240, 1993.
36. Corpas, E., M.R. Blackman, R. Roberson, D. Scholfield, and S.M. Harman, Oral arginine/lysine does not increase growth hormone and insulin-like growth factor-I secretion in old men, *J. Gerontol.* 48:M128-M133, 1993.
37. Roth, G.S., M.R. Blackman, D.K. Ingram, M.A. Lane, S.S. Ball, and R.G. Cutler, Age-related changes in androgen levels of rhesus monkeys subjected to dietary restriction, *Endoc. J.* 1: 227-234, 1993.
38. Kochman, K., M.A. Kowatch, G.S. Roth, and M.R. Blackman, Effects of age and sex on basal and dopamine-inhibited in vitro prolactin release, and dopamine receptor binding, by the rat adenohypophysis, *Aging: Clin. Exp. Res.* 5: 349-356, 1993.
39. Cizza, C., A.E. Calogero, L.S. Brady, G. Bagdy, E. Bergamini, M.R. Blackman, G.P. Chrousos, and P.W. Gold, Male Fischer 344/N rats show a progressive central impairment of the hypothalamic-pituitary adrenal axis with advancing age, *Endocrinology* 134: 1611-1620, 1994.
40. Harman, S.M., and M.R. Blackman, Male Menopause, Myth or Menace? *The Endocrinologist* 4: 212-217, 1994.
41. Mastorakos, G., G. Cizza, R. Kvetnansky, E. Bergamini, M.R. Blackman, P.W. Gold, and G.P. Chrousos, Aging and acute stress decrease corticotropin releasing hormone in the ovary of the Fischer 344/N rat, *Life Sci.* 56: 1065-1071, 1995.
42. Cizza, G., K. Pacak, R. Kvetnansky, M. Palkovits, L.S. Brady, K. Fukuhara, I.J. Kopin, D.S. Goldstein, E. Bergamini, M.R. Blackman, G.P. Chrousos, and P.W. Gold, The stress responsivity of the central and peripheral sympathetic nervous system is decreased in the aged male 344/N Fischer rat, *J. Clin. Invest.* 95:1217-1224, 1995.

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79. O'Connor, K.G., S.M. Harman, M.F. Bellantoni, T.E. Stevens, K. Pabst, E. Cottrell, and M.R. Blackman, Effects of GH, IGF-I, and Body Fat on Markers of Bone Metabolism in Healthy Elderly Persons, presented at the Annual Meeting of the American Geriatrics Society, Washington, D.C., May 18-21, 1995.

\* Recipient of a 1995 Trainee Investigator Award from the AAP-ASCI-AFCR for this abstract

80. O'Connor, K.G., S.M. Harman, J.D. Tobin, T.A. Roy, E.P. Shapiro, P.S. Hees, T.E. Stevens, M.F. Bellantoni, and M.R. Blackman, Are the GH-IGF-I axis and adiposity each predictive of lipids, glucose and insulin in healthy elderly persons? presented at the 77th Annual Meeting of the Endocrine Society, Washington, DC, June 14-17, 1995.

81. Pearson, J.D., M.R. Blackman, E.J. Metter, Z. Waclawiw, and S.M. Harman, Effects of age and cigarette smoking on long-term longitudinal changes in androgens and SHBG in healthy men, presented at the 77th Annual Meeting of the Endocrine Society, Washington, DC, June 14-17, 1995.

82. O'Connor, K.G., S.M. Harman, J.D. Tobin, T.A. Roy, M.F. Bellantoni, and M.R. Blackman, Interactions among GH, IGF-I, osteocalcin and body fat as predictors of bone mineral density in healthy elderly people, presented at the 17th Annual Meeting of the American Society for Bone and Mineral Research, Baltimore, MD, Sept., 1995.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

83. \*Few, W., N. Graham, M. Blackman, D. Hoover, and A. Dobs, Weight loss in HIV infection and its relationship to serum hormones, presented at the Annual Meeting of the American College of Nutrition, October, 1995.

84. O'Connor, K.G., S.M. Harman, E. Cottrell, J. Tobin, T. Roy, K. Pabst, T. Stevens, Jr., M. Bellantoni, and M. Blackman, The relationships among GH, IGF-I, body composition and strength in healthy elderly people, presented at the 48th Annual Meeting of the Gerontology Society, Los Angeles, CA, Nov. 15-19, 1995, Abstract #406.

85. Stevens, T., W. Adler, R. Bennett, M. Harman, and M. Blackman, The relationships of GH, IGF-I, and IGFBP-3 with immune cell and granulocyte functions differ in healthy elderly women and men, presented at the 48th Annual Meeting of the Gerontology Society, Los Angeles, CA, Nov. 15-19, 1995, Abstract #368.

86. Busby-Whitehead, J., S.M. Harman, E. Cottrell, J.Tobin, K.G. O'Connor, K. Stewart and M.R. Blackman, Relationships of the GH-IGF-I axis, body composition and aerobic capacity differ in healthy elderly women and men, presented at the 48th Annual Meeting of the Gerontology Society, Los Angeles, CA, Nov. 15-19, 1995.

87. Blackman, M.R., The widening spectrum of hypogonadal disorders in men, presented at the Annual Meeting of the American Association for Clinical Endocrinology, Seattle, WA, May 1-3, 1996.

88. \*\*Stevens, T.E., S.M. Harman, W.A. Adler, R.S. Pyle, C. St.Clair, J. Gusenoff, and M.R. Blackman, The inter-relationships between spontaneous nocturnal cortisol secretion and peripheral lymphocyte number and function differ in healthy elderly women and men, presented at the Annual Meeting of the American Geriatrics Society, Chicago, IL, May 2-5, 1996.

89. Haydar, Z., J.L. Fleg, J.D. Tobin, P.V. Vaitkevicius, S.M. Harman, and M.R. Blackman, Aging, not circulating IGF-I, influences aerobic capacity in healthy women and men, presented at the Annual Meeting of the American Geriatrics Society, Chicago, IL, May 2-5, 1996.

\* Recipient of New Investigator Award, American College of Nutrition for this abstract

\*\* Recipient of 1996 Merck/AGS New Investigator Award for this abstract

90. Haydar, Z., P.V. Vaitkevicius, J.L. Fleg, J.D. Tobin, S.M. Harman, and M.R. Blackman, Aging, not circulating IGF-I, influences arterial stiffness in healthy women and men, submitted to the Annual Meeting of the American Geriatrics Society, Chicago, IL, May 2-5, 1996.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

91. \*Jayme, J., S.M. Harman, K.G. O'Connor, C. St. Clair, J. Gusenoff, J.D. Tobin, T.A. Roy, E.P. Shapiro, P.S. Hees, and M.R. Blackman, The negative relationships of cortisol and GH secretion with body fat in healthy elderly persons are gender-distinct, presented at the 10th International Congress of Endocrinology, San Francisco, CA, June 12-15, 1996.

92. Dobs, A.S., W.L. Few, M.R.Blackman, S.M. Harman, D. Hoover, and N.M.H. Graham, Serum hormones in men with HIV-associated wasting, presented at the 10th International Congress of Endocrinology, San Francisco, CA, June 12-15, 1996.

93. Cizza, G., M. Herkenham, M. Whiteside, L.S. Brady, R. Kvetnansky, M.R. Blackman, P.W. Gold, and G.P. Chrousos, Age- and gender-associated changes of the central components of the stress system in Fischer 344/N rats, presented at the 10th International Congress of Endocrinology, San Francisco, CA, June 12-15, 1996.

94. Jayme, J.J., S.M. Harman, K.G. O'Connor, J.D. Tobin, T.A. Roy, C. St. Clair,

J. Gusenoff, and M.R. Blackman, The inverse relationship between cortisol secretion and bone mineral d

95. Stevens, T.E., S.M. Harman, D. Metz, K. Pabst, I. Barofsky, and M.R. Blackman, Gender differences in the relationships of GH and IGF-I with Health Related Quality of Life in healthy older persons, presented at the 49th Annual Meeting of the Gerontology Society, Washington, DC, Nov. 17-21, 1996.

96. Gusenoff, J.A., S.M. Harman, E. Cottrell, K.G. O'Connor, J. Tobin, T. Roy, J. Jayme, C. St. Clair and M.R. Blackman, The relationships among cortisol secretion, lean body mass, strength and age differ in healthy elderly women and men, presented at the 49th Annual Meeting of the Gerontology Society, Washington, DC, Nov. 17-21, 1996

97. Jacobs, L.S., S.M. Harman, E. Cottrell, K. Pabst, and M.R. Blackman. The distribution of body water in the healthy elderly is associated with circulating IGF-1, presented at the 49th Annual Meeting of the Gerontology Society, Washington, DC, Nov. 17-21, 1996.

98. Hees, P., K. Stewart, M.R. Blackman, S.M. Harman, and E. Shapiro, Are growth hormone levels related to cardiac structure and function in the elderly?, presented at the 69th Annual Meeting of the American Heart Association, November, 1996.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

99. Phang, L., M.F. Bellantoni, S.M. Harman, M.R. Blackman, E. Cottrell, and J.D. Tobin, Longitudinal assessment of body composition during the menopausal transition, presented at the 6th Annual Meeting of the American Association of Clinical Endocrinologists, Philadelphia, PA, April 14-15, 1997.

\* Recipient of a 1996 Endocrine Society Travel Award for this abstract

100. Stewart, K.J., S.M. Harman, E.S. Cottrell, E.P. Shapiro, P.H. Hees, and M.R. Blackman, Associations of growth hormone secretion, insulin and visceral fat with blood pressure in the elderly, presented at the 44th Annual Meeting of the American College of Sports Medicine, May 28-31, 1997.

101. Christmas, C., G. Cizza, S.M. Harman, A. Lotsikas, J.J. Jayme, K.G. O'Connor, M.F. Bellantoni, T. Stevens, C. St. Clair, J.D. Tobin, T.A. Roy, G.P. Chrousos, E. Shapiro, K. Pabst, and M.R. Blackman, Plasma leptin levels are directly related to adiposity, but not to age, sex or the endocrine-metabolic milieu, in healthy elderly individuals, presented at the 79th Annual Meeting of the Endocrine Society, Minneapolis, MN, June 11-14, 1997.

102 Jayme, J.J., J.D. Veldhuis, S.M. Harman, M.F. Bellantoni, C. Christmas, K.G.

O'Connor, T. Stevens, C. St. Clair, J. Gusenoff, K. Pabst, and M.R. Blackman, GH and cortisol secretory dynamics, and their inter-relationships, differ in healthy elderly women versus men, presented at the 79th Annual Meeting of the Endocrine Society, Minneapolis, MN, June 11-14, 1997.

103. Tobin, J.D., L.J. Phang, T.A. Roy, S.M. Harman, M.R. Blackman, and M.F. Bellantoni, Longitudinal assessment of bone loss during the perimenopausal transition, presented at the 19th Annual Meeting of the American Society for Bone and Mineral Research, Cincinnati, Ohio, September, 1997.

104. Christmas, C., S.M. Harman, E. Cottrell, T. Roy, J. Tobin, K.G. O'Connor, J. Jayme, M.F. Bellantoni, B. Hurley, and M.R. Blackman, Muscle strength is not an independent determinant of hip or spine bone mineral density in healthy elderly women or men, presented at the 50th Annual Meeting of the Gerontology Society, Cincinnati, Ohio, Nov. 14-18, 1997.

105. Rywik, T.M., M.R. Blackman, R.C. Zink, P.V. Vaitkevicius, A.R. Yataco, K.J. Stewart, E.H. Cottrell, J.G. Wright, L.I. Katzel, and J.L. Fleg, Can endurance training enhance endothelial function in older men, presented at the 70th Annual Meeting of the American Heart Association, November, 1997.

106. Christmas, C., S.M. Harman, C.St. Clair, T. Roy, J.D. Tobin, K.G. O'Connor, J. Jayme, M.F. Bellantoni, and M.R. Blackman, Relationships of GH, IGF-I, testosterone (T), and body composition with bone in healthy elderly men, presented at the Annual Meeting of the American Geriatrics Society, Seattle, WA, May, 1998.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

107. Cizza, G., M.R. Blackman, M. Whiteside, E. Webster, P.W. Gold, and G.P. Chrousos, Age- and gender-associated changes in CRH receptors influencing the stress system in Fischer 344/N rats, presented at the 80th Annual Meeting of the Endocrine Society, New Orleans, LA, June 24-27, 1998.

108. Blackman, M.R., C. Christmas, T. Munzer, K.G. O'Connor, T. Stevens, M.F. Bellantoni, K. Pabst, C. St. Clair, H.B. Carter, E.J. Metter, and S.M. Harman, "Influence of Testosterone on the GH-IGF-I Axis in Healthy Elderly Men.", presented at the International Symposium on "Sex Steroids and the Somatotrophic Axis", sponsored by Sero Symposia, Naples, Florida, October 22-25, 1998.

109. Munzer, T., S.M. Harman, C. Christmas, M.F. Bellantoni, C. St. Clair, K. Pabst and M.R. Blackman, Is GH/ IGF- I axis activity related to serum PSA levels in healthy old men? presented at the 51st Annual Meeting of the Gerontology Society, Philadelphia, Pa, Nov. 21-24, 1998.

110. Harman, S.M., J.D. Tobin, J. Pearson, J. Metter, J. Fozard, and M.R. Blackman, Influence of aging and secular effects on serum testosterone levels in healthy men, presented at the 51st Annual Meeting of the Gerontology Society, Philadelphia, Pa, Nov. 21-24, 1998.

111. K. Herreman, M. Blackman, S. Rubinstein, X. Huang, K. Pabst, S.M. Harman, and B. Caballero. Relationships of GH secretion and serum IGF-I levels with protein turnover in healthy elderly subjects, presented at the Annual FASEB Meeting, Washington, DC, April 17-21, 1999.

112. Marcell, T.J., B.D. Rodgers, J. Jayme, D.D. Metz, S.M. Harman, and M.R. Blackman, Serum levels of testosterone, but not of GH or IGF-I, are directly related to skeletal muscle mRNA levels of IGF-I receptor and GH receptor in healthy elderly men, presented at the 46th Annual Meeting of the American College of Sports Medicine, Seattle, WA, June 2-5, 1999.

113. \* Edmond, J., D. Metz, S.M. Harman, E. Cottrell, T. Stevens, C. Christmas, T. Munzer, I. Barofsky, K. Pabst, and M.R. Blackman, Influences of age and physical activity on muscle strength and aerobic capacity in healthy elderly individuals, presented at the Annual Scientific Meeting of the American Geriatrics Society, Philadelphia, PA, May 19-23, 1999.

114. Christmas C., S.M. Harman, D. Metz, J.D. Tobin, T.A. Roy, T. Munzer, J. Jayme, M.F. Bellantoni, C. St. Clair, J. Gusenoff, K. Pabst, and M.R. Blackman. Is self-reported affect related to cortisol secretion or bone density in healthy elderly individuals? submitted to the Annual Scientific Meeting of the American Geriatrics Society, Philadelphia, PA, May 19-23, 1999.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

115. \* Caplan F., S.M. Harman, D. Taub, R. Pyle, T. Stevens, C. Christmas, T. Munzer, C. St. Clair, and M.R. Blackman. Relationships of the GH-IGF-I axis to in vitro indices of immune function in healthy elderly men and women, presented at the Annual Scientific Meeting of the American Geriatrics Society, Philadelphia, PA, May 19-23, 1999.

116. Blackman, M.R., C. Christmas, K.G. O'Connor, T. Munzer, J.D. Tobin, T.A. Roy, J. Busby-Whitehead, T. Stevens, M.F. Bellantoni, K. Pabst, J.D. Sorkin, and S.M. Harman. Effects of growth hormone and/or sex steroid administration on body composition in healthy elderly women and men, presented at the 81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.

117. Christmas, C., S.M. Harman, T. Munzer, K.G. O'Connor, M.F. Bellantoni, J. Busby Whitehead, A. Dobs, K. Pabst, J.D. Sorkin, and M.R. Blackman. Effects of administration of growth hormone and/or sex steroids on serum lipid profiles in healthy elderly women and men, presented at the 81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.

\* Recipients John A. Hartford Foundation/American Federation for Aging Research Travel Award to the 1999 Annual Meeting of the American Geriatrics Society for this abstract

118. \* Edmond, J., J. Busby-Whitehead, S.M. Harman, E. Cottrell, K. Stewart, C. Christmas, T. Munzer, J.D. Tobin, T.A. Roy, M.F. Bellantoni, T. Stevens, K.G. O'Connor, K. Pabst, J.D. Sorkin, and M.R. Blackman. Effects of Growth Hormone and/or sex steroid administration on aerobic capacity in healthy elderly women and men, presented at the 81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.

119. Munzer, T., M.R. Blackman, P. Hees, E. Shapiro, C. Christmas, M.F. Bellantoni, T. Stevens, K.G. O'Connor, J. Busby-Whitehead, K. Pabst, J.D. Sorkin, and S.M. Harman. Effects of growth hormone and/or sex steroid administration on abdominal fat by magnetic resonance imaging (MRI) in healthy elderly women and men, presented at the 81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.

120. Ivey F.M., S.M. Harman, B.F. Hurley, E. Cottrell, C. Christmas, T. Münzer, K. Pabst, J.D. Sorkin, and M.R. Blackman. Effects of GH and/or sex steroid administration on thigh muscle and fat by magnetic resonance imaging (MRI) in healthy elderly men and women, presented at the 81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.

121. Blackman, M.R., D. Taub, R. Pyle, F. Caplan, T. Stevens, T. Münzer, C. Christmas, C. St. Clair, K. Pabst, and S.M. Harman, Relationships of the GH-IGF-I axis with in vitro indices of immune function in healthy elderly men and women, presented at the International Symposium on "Growth Hormone in Immune Reconstitution: Basic and Clinical Studies", sponsored by Serono Symposia, St. Petersburg Beach, Florida, October 7-10, 1999.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

122. Moffat, S.D., A.B. Zonderman, S.M. Harman, M.R. Blackman, and S.M. Resnick, Longitudinal decline in DHEA is independent of cognitive status and cognitive decline in healthy elderly men, presented at the Annual Meeting of the Society for Neuroscience, October 26-30, 1999.

123. Edmond, J., S.M. Harman, J. Busby-Whitehead, E. Cottrell, K.J. Stewart, C. Christmas, T. Munzer, C. St. Clair, K. Pabst, and M.R. Blackman, Relationship of the GH-IGF-I axis with aerobic capacity in healthy elderly women and men, presented at the International Symposium on "Aging and Endocrinology", sponsored by Serono Symposia, Tempe, Arizona, October 27-30, 1999.

124. Münzer, T., S.M. Harman, C. Christmas, K.G. O'Connor, J.D. Tobin, T.A. Roy, C. St. Clair, K. Pabst, and M.R. Blackman, Relationships of the GH-IGF I axis with body fat, glucose and insulin in healthy elderly women and men, presented at the International Symposium on "Aging and Endocrinology", sponsored by Serono Symposia, Tempe, Arizona, October 27-30, 1999.

125. Blackman, M.R., M.F. Bellantoni, J. Busby-Whitehead, T. Stevens, K.G. O'Connor, J. Jayme, C. Christmas, T. Münzer, J. Edmond, E. Cottrell, K. Stewart, J.D. Tobin, T.A. Roy, E.

Shapiro, P. Hees, B. Hurley, F.M. Ivey, C. St. Clair, K. Pabst, J.D. Sorkin, and S.M. Harman. Physiology of GH Decline in Aging: Current Concepts and Lessons from the NIA/NIH Clinical Trial at Johns Hopkins, presented at the International Symposium on "Endocrinology and Aging", sponsored by Serono Symposia, Tempe, Arizona, October 27-30, 1999.

\* Recipient of a 1999 Quest Diagnostics Young Investigator Travel Award to the Annual Endocrine Society Meeting for this abstract.

126. Barofsky, I., D. Metz, A. Davidoff, T. Stevens, K. Pabst, S.M. Harman, and M.R. Blackman, The Growth Hormone/Sex Steroid (GH/SS) Intervention Study in the Elderly: Design of the Health-Related Quality of Life (HRQOL) Assessment, to be presented at the 6th Annual Conference of the International Society for Quality of Life Research, Barcelona, Spain, November 3-6, 1999.

127. Hees, P.S., E.P. Shapiro, S.M. Harman, E. Cottrell, K. Stewart, S. Livingood, C. Christmas, T. Munzer, K. Pabst, J.D. Sorkin, and M.R. Blackman, Growth hormone administration to healthy elderly individuals increases cardiac endurance without effects on cardiac structure

128. Rywik, T., M.R. Blackman, P. Vaitkevicius, E. Cottrell, J. Wright, S.M. Harman, and J. Fleg, Is endothelial function different between elderly men and women?, submitted to the 72nd Annual Meeting of the American Heart Association, Atlanta, Georgia, November 7-10, 1999.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

129. Upadhyaya, Z., S.M. Harman, J.A. Gusenoff, T. Münzer, C. Christmas, J.J. Jayme, K.G. O'Connor, J.D. Tobin, T.A. Roy, C. St. Clair, K. Pabst, and M.R. Blackman. Relationships of spontaneous nocturnal cortisol secretion with body fat and metabolic outcomes in healthy elderly women and men, presented at the Annual NIH National Minority Research Symposium, Phoenix, AZ, Nov. 10-13, 1999.

130. Münzer, T., S.M. Harman, G. Cizza, G. Chrousos, C. Christmas, K.O'Connor, M. Bellantoni, K. Pabst, and M. Blackman. Effects of GH and/or sex steroid administration on serum leptin levels in healthy elderly women and men, presented at the 52nd Annual Meeting of the Gerontology Society of America, San Francisco, CA, Nov. 19-23, 1999.

131. Christmas, C., S.M. Harman, T. Roy, J. Tobin, T. Munzer, K.G. O'Connor, M. Bellantoni, K. Pabst, J. Sorkin, and M. Blackman. The effects of GH and/or sex steroid administration on bone density in healthy elderly individuals, presented at the 52nd Annual Meeting of the Gerontology Society of America, San Francisco, CA, Nov. 19-23, 1999.

132. Huang, Z., K. Herreman, M. Blackman, S. Rubinstein, K. Pabst, S.M. Harman, and B. Caballero, Effect of Growth Hormone on Protein Turnover in the Elderly, submitted to the Annual FASEB Meeting, 2000.

133. Münzer, T. S.M. Harman, C. Christmas, E. Cottrell, C. St. Clair, K. Pabst, J.D. Sorkin, and M.R. Blackman. Effects of Administration of Testosterone and/or GH in Healthy Aged Men, presented at the 2nd World Congress on the Aging Male, Geneva, Switzerland, Feb. 9-13, 2000.

134. Edmond, J., D.D. Metz; S.M. Harman, I. Barofsky, K. Pabst, T. Stevens, T. Münzer, C. Christmas, J.D. Sorkin, and M.R. Blackman. Effects of Administration of Growth Hormone (GH) and/or Sex Steroids (SS) on Health Related Quality of Life (HRQOL) in Healthy Aged Individuals, presented at the 57th Annual Scientific Meeting of the American Geriatrics Society, Nashville, TN, May 17-21, 2000.

135. T. Münzer, S.M. Harman, D.D. Metz; K. Pabst, I. Barofsky, C. Christmas, T. Roy, J. Tobin, J.D. Sorkin, and M.R. Blackman. Effects of Growth Hormone (GH) and/or Sex Steroids (SS) on The Relationship Between Body Fat and Perceived Body Image in Healthy Aged Individuals, presented at the 57th Annual Scientific Meeting of the American Geriatrics Society, Nashville, TN, May 17-21, 2000.

136. Gusenoff, J.A., S.M. Harman, J.D. Veldhuis, J.J. Jayme, C. St. Clair, T. Münzer, C. Christmas, K.G. O'Connor, T.E. Stevens, M.F. Bellantoni, K. Pabst, and M.R. Blackman. Cortisol and GH Secretory Dynamics, and their Interrelationships, in Healthy Aged Individuals, presented at the 57th Annual Scientific Meeting of the American Geriatrics Society, Nashville, TN, May 17-21, 2000

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

137. Metz, D.D., M.R. Blackman, I. Barofsky, K. Pabst, T.E. Stevens, C. St. Clair, and S.M. Harman, Relationships of self-reported physical activity with the GH/IGF-I axis and body fat in healthy aged women and men, presented at the 47th Annual Meeting of the American College of Sports Medicine, Indianapolis, IN, May 31-June 3, 2000.

138. Münzer, T., S.M. Harman, C. Rosen, C. Christmas, J. Edmond, K. Pabst, C. St. Clair, J.D. Sorkin, and M.R. Blackman. Effects of Growth Hormone (GH) and/or Sex Steroids (SS) on Circulating Levels of IGF-I and IGF Binding Proteins in Healthy Older Women and Men, presented at the 82nd Annual Meeting of the Endocrine Society, Toronto, Canada, June 21-24, 2000.

139. Harman, S.M., K.M. Pabst, T. Münzer, C. Christmas, K.G. O'Connor, M.F. Bellantoni, J. Busby-Whitehead, T. Stevens, J.D. Sorkin, and M.R. Blackman. Adverse Effects Observed in Healthy Women and Men over 65 years of age Treated with GH and Sex Steroid Hormone Replacement, presented at the 82nd Annual Meeting of the Endocrine Society, Toronto, Canada June 21-24, 2000.

140. Marcell, T.J., M.R. Blackman, R.J. Urban, and S. M. Harman, GH and Testosterone Administration Increase Autocrine IGF-I and Myostatin Gene Expression in Skeletal Muscle of Healthy Older Men, presented at the 82nd Annual Meeting of the Endocrine Society, Toronto, Canada, June 21-24, 2000.



141. Bellantoni, M.F., E.J. Metter, R. Manno, J.D. Tobin, S.M. Harman, and M.R. Blackman, Longitudinal Assessment of Serum Levels of Reproductive Hormones during the Menopausal Transition, presented at the 53rd Annual Meeting of the Gerontology Society of America, Washington, DC, November 17-21, 2000.

142. Ankrom, M., M. Tayback, and M. Blackman, The effect of calcium supplementation to 1500 mg a day in elderly men on bone, presented at the 53rd Annual Meeting of the Gerontology Society of America, Washington, DC, November 17-21, 2000.

143. Turner, K.L., A.C. Bacher, J.R. DeRegis, J.L. Fleg, J. Sung, M.R. Blackman, and K.J. Stewart, Are Fitness and Fatness Associated with Health-Related Quality of Life in Older Persons, presented at the 48th Annual Meeting of the American College of Sports Medicine, Baltimore, MD, May 30-June 2, 2001.

144. DeRegis, J.R., K.L. Turner, A.C. Bacher, J. Sung, M.R. Blackman, P. Ouyang, and K.J. Stewart, Is Body Fatness or its Distribution Related to Endothelial Function in Older Persons? presented at the 48th Annual Meeting of the American College of Sports Medicine, Baltimore, MD, May 30-June 2, 2001.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

145. Marcell, T.J., M.R. Blackman, C.R. Bush, B.A. Luxon, R.J. Urban, and S.M. Harman, Down Regulation of Proteolytic Gene Expression May Contribute to Increased Muscle Mass Following Administration of Growth Hormone (GH) Plus Testosterone to Healthy Aged Men, presented at the 83rd Annual Meeting of the Endocrine Society, Denver, Colorado, June 20-23, 2001.

146. Münzer, T., S.M. Harman, C. Christmas, C. St. Clair, K. Pabst, J.D. Sorkin, and M.R. Blackman, Metabolic effects during the single and combined administration of Growth Hormone and Testosterone in aged men, presented at the 3rd World Congress on the Aging Male, Berlin, Germany, Feb., 2002.

147. Blackman, M.R., "Effects of Low Testosterone on Bone Mineral Density in Men", presented in an Endocrine Society CMES Symposium "Critical Issues in Male Hypogonadism and Testosterone Replacement Therapy: Annual Meeting of the Endocrine Society, San Francisco, CA June 21, 2002.

148. Harman, S.M. and Blackman, M.R., Growth Hormone Effects on Lean Body Mass, Fat Mass, Muscle Strength, Cardiac Endurance and Adverse Events in Healthy Aged Women and Men, presented at the Annual KIMS/KIGS Meeting, Pharmacia Corp, Florence, Italy, November 5-6, 2002.

149. Mansky, P.J., Grem, J., Wallerstedt, D., Monahan, B., and Blackman, M.R., A Phase I Study of Mistletoe Extract and Gemcitabine in Patients with Advanced Cancer: A Model for Addressing Issues of Botanical/Drug Interactions and the Use of Botanicals in Cancer Therapy, presented at Comprehensive Cancer/CAM Meeting, Washington, DC, April 9-13, 2003.

150. Alesci, S., Zoumakis, E., Manoli, I., Ayala, A., Gold, P.W., Chrousos, G.P., and Blackman, M.R., L-Carnitine stimulates leptin and adiponectin release from primary cultures of human subcutaneous adipocytes, presented at the 85<sup>th</sup> Annual Meeting of the Endocrine Society, Philadelphia, PA, June 19-22, 2003.

151. \*Khan, J., Sorkin, J.D., Harman, S.M., Munzer, T. and Blackman, M.R., DHEAS Relationships with Body Composition and Endocrine-Metabolic Functions, before and after GH and Sex Steroid Administration, in Healthy Aged Women and Men, presented at the 85<sup>th</sup> Annual Meeting of the Endocrine Society, Philadelphia, PA, June 19-22, 2003.

152. Arnold, J.T., Le, H., and Blackman, M.R., DHEA stimulates PSA, androgen receptor, and IGF-I receptor expression, but not cell proliferation, in prostate stromal and cancer cell cultures, presented at the 94<sup>th</sup> Annual Meeting of the American Association for Cancer Research, Washington, DC, July 11-14, 2003.

\*Recipient of a 2003 Student Travel Award to the Annual Endocrine Society Meeting for this abstract.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

153. Arnold, J.T., Le, H., and Blackman, M.R., DHEA Effects on PSA, Androgen Receptor, and IGF-I Receptor Expression, And Cell Proliferation In Prostate Stromal And Cancer Cell Cultures, presented at the 5<sup>th</sup> World Congress of Urological Research, London, UK, Sept. 24-27, 2003.

154. Andres, R., Blackman, M.R., Harman, S.M., Metter, E.J., and Muller, D.C., Aging, Androgens, and the Metabolic Syndrome, to be presented at The 4th World Congress on the Aging Male, Prague, Czech Republic, February 26-29, 2004.

155. Blackman, M.R., Ng, J., and Swerdloff, R. Carnitine and Male Infertility, presented at the NIH Conference, "Carnitine: The Science Behind a Conditionally Essential Nutrient", National Institutes of Health, Bethesda, MD, March 25-26, 2004.

156. Alesci, S., Su, Y.A., Manoli, I., Gold, P.W., Drogari, E., Blackman, M.R., and Chrousos, G.P., Human Mitochondria-Related Gene Expression Profiling By a Custom cDNA Microarray Chip (hMitChip): Validation in Human Muscle Cells Treated with Glucocorticoid, to be presented at the 86<sup>th</sup> Annual Meeting of the Endocrine Society, New Orleans, LA June 16-19, 2004.

157. Manoli, I., Alesci, S., Le, H., Su, Y.A., Kino, T., Gold, P.W., Chrousos, G.P., and Blackman, M.R., Effects of Dexamethasone on Gene Expression Profiles in Human Skeletal Muscle Cells Using a Mitochondria-Focused cDNA Microarray (hMitChip): Insights into the

Molecular Bases of Glucocorticoid- or Stress-induced Myopathy, to be presented at the 86<sup>th</sup> Annual Meeting of the Endocrine Society, New Orleans, LA June 16-19, 2004.

158. Manoli, I., Alesci, S., Le, H., Su, Y.A., Kino, T., Gold, P.W., Chrousos G.P., and Blackman, M.R., DexamethasonIncreases Monoamine Oxidas A Transcription in Primary Human Skeletal Myocytes: Implications for Glucocorticoid- or Stress- Induced Myopathy, to be presented at the 86<sup>th</sup> Annual Meeting of the Endocrine Society, New Orleans, LA June 16-19, 2004.

159. Khan, J. Sorkin, J.D., Harman, S.M., Veldhuis, J.D., Bhasin S., Münzer T., and Blackman M.R., LH Secretion and Total and Free Testosterone Levels in Healthy Aged Women and Men: Effects of GH and Sex Steroid Administration, to be presented at the 86<sup>th</sup> Annual Meeting of the Endocrine Society, New Orleans, LA June 16-19, 2004.

160. Cizza, G., Ronsaville, D., Eskandari, F., Martinez, P., Mistry, S., Torvik, S., Reynolds, J., Gold, P.W., and Blackman, M.R., Serum Leptin levels are elevated in premenopausal women with major depressive disorder and are inversely related to bone mineral density: Potential implications for the pathogenesis of bone loss in patients with major depression, to be presented at the 86<sup>th</sup> Annual Meeting of the Endocrine Society, New Orleans, LA June 16-19, 2004.

#### **ABSTRACTS AND PRESENTATIONS (cont'd):**

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161. Mistry, S., Eskandari, F., Martinez, P., Torvik, S., Ronsaville, D., Drinkard, B., Sebring, N., Blackman, M.R., Reynolds, J., Gold, P.W., Csako, G., and Cizza, G., Plasma C reactive protein (CRP) levels are increased in premenopausal women with major depression: Potential clinical implications for increased cardiovascular morbidity, to be presented at the 86<sup>th</sup> Annual Meeting of the Endocrine Society, New Orleans, LA June 16-19, 2004.

162. P.E. Martinez, D. Ronsaville, H. Kleitz, A. Haim, S. Torvik, F. Eskandari, S. Mistry, J. Reynolds, P.W. Gold, M.R. Blackman and G. Cizza, Distinctive Patterns of HPA Axis Function across Depressive Subtypes: A Closer Look at the Circadian Rhythms of Neuroendocrine Hormones in Premenopausal Women, to be presented at the 86<sup>th</sup> Annual Meeting of the Endocrine Society, New Orleans, LA June 16-19, 2004.

163. Cappola, A., Ratcliffe, S., Bhasin, S., Blackman, M.R., Cauley, J., Robbins, J., Zmuda, J., Harris, T., and Fried, L., Total Testosterone Levels in Women Over the Age of 65 are Influenced by Oophorectomy, Estrogen, Glucocorticoids, and BMI, to be presented at the 86<sup>th</sup> Annual Meeting of the Endocrine Society, New Orleans, LA June 16-19, 2004.

#### **FILMS, MEDIA:**

25-30 appearances on local, national (network) and international television for interviews related to ongoing growth hormone and sex steroid research in elderly persons

75-75 interviews in local, national and international newspapers, magazines and popular books related to ongoing hormonal research in elderly persons